UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,676	03/29/2004	Markus P. J. Fromherz	A3604-US-NP	2978

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EXAMINER
LAUGHLIN, NATHAN L

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 March 2004</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
  closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-21</u> is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-6,8-16 and 18-21</u> is/are rejected.
7)☐ Claim(s) <u>7 and 17</u> is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>29 March 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>3-29-04, 6-7-04, 2-4-08</u>.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

Information Disclosure Statement

1.　　The IDS filed on 2-4-08, includes EP 0633207, but does not include an English abstract, therefore, cannot be considered by the Examiner.　Examiner requests an English abstract so the reference can be properly considered.

Claim Rejections - 35 USC § 112

2.　　The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.　　Claims 6, 8, 16, and 18, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

　　As to claim 6 and 16 recites the limitation "the total minimum duration times" in line 3.　There is insufficient antecedent basis for this limitation in the claim.

　　As to claim 8 and 18, it is unclear to the examiner how a number (self-synchronization time) is determined from synchronizing the two parallel loops.

Claim Rejections - 35 USC § 103

4.　　The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-4, 6, 9-14, 16, 19-21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Yokoyama (U.S . Pat. 7,062,344) in view of Costanza (U.S pat.

6,198,980).

As to claim 1, 11, 21, Yokoyama teaches a method comprising:

determining jobs of interest, wherein each said job includes not less than one work unit

to be produced (abstract);

determining the configuration of the components and the at least one transport highway

(Fig. 1), wherein said configuration comprises at least one loop, and wherein the

components include at least one machine module (fig. 1);

determining the duration time for each of the components, wherein said duration time

comprises the elapsed time from receipt of a work unit at the component's input location

to arrival of the work unit at the component's output location (fig. 3);

determining at least one default self-synchronization time, wherein said default self-

synchronization time comprises a multiple of said duration time for said at least one

machine module (fig. 3, the multiple is one); and

As to claim 2 and 12, Yokoyama teaches further comprising at least one off-ramp and at

least one on-ramp (fig.1, loading and unloading).

As to claim 3 and 13, Yokoyama teaches wherein the configuration comprises a single loop including at least one machine module component associated with at least one off-ramp and at least one on- ramp and a plurality of highway segments, wherein said highway segments enable the work units to flow through said at least one component or to bypass said at least one component (fig. 1, col. 13 lines 13-52).

As to claim 4 and 14, Yokoyama teaches wherein the configuration comprises at least two loops connected

serially with shared highway segments, wherein each of said loops includes at least one machine module component associated with at least one off-ramp and at least one on-ramp and a plurality of highway segments, wherein said highway segments enable the work units to flow through said at least one component or to bypass said at least one components (fig. 1, col. 13 lines 13-52).

As to claim 6 and 16, Yokoyama teaches wherein determining the default self-synchronization time comprises determining the sum of the total minimum duration times for all components on said single configuration loop (col. 19, lines 46-67).

As to claim 9 and 19, Yokoyama teaches wherein adjusting at least one component duration time comprises adding an adaptation time to the duration time of at least one selected component (fig. 3). The adaptation time is defined and the difference between one duration time and the default self-synchronization time, the self-synchronization

time is defined as a multiple of said duration time. However, if the multiple is one, the

adaptation time is zero. Since, the adaptation time can be zero, no adjusting actually

occurs and any duration time would read on the claims.

As to claim 10 and 20, Yokoyama teaches wherein said adaptation time comprises the

difference between said duration time for at least one selected machine module and the

default self- synchronization time for said selected machine module's configuration loop

(fig. 3). The adaptation time is defined and the difference between one duration time

and the default self-synchronization time, the self-synchronization time is defined as a

multiple of said duration time. However, if the multiple is one, the adaptation time is

zero. Since, the adaptation time can be zero, no adjusting actually occurs and any

duration time would read on the claims.

Yokoyama teaches most of the claimed invention but does not explicitly teach adjusting

the component duration time.

However, Costanza teaches this limitation as follows:

As to claim 1, Constanza teaches optimizing said default self-synchronization time by

adjusting at least one component duration time (col. 3 line 56- col. 4 line 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was created to include the teachings of Costanza into the system and

methods as disclosed by Yokoyama. The motivation to combine is that balancing

(synchronizing) ensures smooth product flow between processes (col. 20 lines 53-54)

6.   Claims 5, 8, 15, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Yokoyama (U.S . Pat. 7,062,344) in view of Costanza (U.S pat. 6,198,980) in

further view of Jones (U.S. PG Pub. 2002/0183884).

Yokoyama in view of Constanza teaches the limitations of claims 1-4, 6, 9-14, 16, 19-

21, including synchronizing machines, and machines that are configured on a loop with

on and off ramps from a highway, but does not explicitly teach or disclose using parallel

machines.

However, Jones teaches this as follows:

As to claim 5 and 15, Jones two loops connected in parallel with shared highway

segments, wherein each of said loops includes at least one machine module [0022].

As to claim 8 and 18, Jones teaches wherein said at least two parallel loops [0022].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was created to include the parallel machines from Jones in to the combination of Yokoyama in view of Costanza. The motivation is that parallel processing is very well known in the art and processing in parallel can reduce the total time of lot processing.

Allowable Subject Matter

7.   Claims 7 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Inquiry

8.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHAN LAUGHLIN whose telephone number is (571)270-1042. The examiner can normally be reached on M - F, 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nate Laughlin/
Examiner, Art Unit 2123

/Zoila E. Cabrera/
Primary Examiner, Art Unit 2123